North American Freight Rail Industry









General Characteristics of North American Freight Railroads

- Vast majority privatelyowned
- Typically, the same company owns the track and operates trains over it
- One railroad does not have automatic access to another railroad's tracks
- Little government funding; income is from freight revenue



• Don't carry passengers

U.S. Railroad Commodity Mix -2012



Railroads and the Economy Are Tightly Intertwined

Manuf. Output vs. Rail Carloads Excl. Coal & Grain



*Data are seasonally adjusted. Source: Federal Reserve, AAR



Total U.S. Rail Carloads + Intermodal Units

(average weekly originations)



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Excludes U.S. operations of Canadian railroads. Source: AAR *Weekly Railroad Traffic / Rail Time Indicators*

U.S. Rail Intermodal Traffic (Containers and Trailers)

(average weekly originations)



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Excludes U.S. operations of Canadian railroads. Source: AAR Weekly Railroad Traffic / Rail Time Indicators

U.S. Rail Carloads of Coal

(average weekly originations)



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

*Chemicals; paper; metal products; autos; crushed stone & gravel; metallic ores; and stone & glass products. Excludes U.S. operations of Canadian railroads. Source: AAR *Weekly Railroad Traffic*

Originated Carloads of Crude Oil on U.S. Class I Railroads



*estimate based on first three quarters annualized Source: AAR

Volume Must be Carefully Managed to Maintain a Fluid Network



- As volume on rail networks approaches 100% of theoretical capacity, fluidity of the network deteriorates.
- If volume offered exceeds 100% of theoretical capacity, maximum throughput capability actually declines.
- "Comfortable" capacity is generally about 70% to 80% of maximum theoretical capacity.
- Both total and average unit cost increases rapidly after "comfortable" capacity is exceeded.



Input Factor Cost History

1990 - 2011: Rail Production Input Factor Cost Trends



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication



Current Weight of Cost Components

Cost Component	Weight
Labor	31.2%
Fuel	22.3%
Materials & Supplies	4.9%
Equipment Rents	5.6%
Depreciation	11.9%
Interest	2.0%
Other	22.1%

Source- Quarterly RCAF Filing, Second Quarter 2014

1990 - 2011: Rail Cost Adjustment Factor (All Inclusive Index)



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication

Rail Cost Adjustment Factor (RCAF) vs. Consumer Price Index (CPI)

(Index 2000 = 100)



*The RCAF measures changes in the price levels of inputs to railroad operations. Data are averages of quarterly values for each year. Source: AAR, BLS

1990 - 2011: Cost and Price Trends



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication, STB Waybill Sample

Why Use the Ton-Mile as the Primary Price Measure?



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication, STB Waybill Sample

Recent RR Rate Increases Largely a Function of Higher RR Input Costs



*The Railroad Cost Recovery Index measures changes in the price levels of inputs to railroad operations. Data are averages for all commodities for Class I railroads. **As measured by average revenue per ton-mile for all commodities. Source: AAR

1990 - 2011: Commodity Price Trends



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication, STB Waybill Sample

1990 - 2011: Commodity Price Trends



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication; STB Waybill Sample

1990 - 2011: Commodity Price Trends



Source- R-1 Reports to STB; Rail Cost Recovery Index Publication, STB Waybill Sample



Productivity: Key to Improved Rail Network Performance

Overall Freight Railroad Productivity

(revenue ton-miles per constant dollar operating expense*)



*Using this measure, productivity can be negatively affected when railroad input costs (e.g., fuel) increase, as they have in recent years. Source: AAR

Overall Freight Railroad Productivity Excluding Fuel

(revenue ton-miles per constant dollar operating expense*)



^{*}excludes fuel. Source: AAR

Class I Railroad Employment



Source: AAR

Revenue Ton-Miles Per Employee

(millions)



Sharp Increase in Rail Traffic Density

(millions of revenue ton-miles per mile of railroad)



Miles = route-miles owned Data are for Class I railroads. Source: AAR



High Density* Rail Miles Have Increased

(miles)



*Track with freight density of at least 20 million gross ton-miles. Excludes way and yard switching tracks. Source: AAR

Average Freight Train Load





Revenue Ton-Miles Per Locomotive

(millions)



Freight Rail Fuel Efficiency Is Up 102% Since 1980

(revenue ton-miles per gallon)



Source: AAR

Fuel Use vs. Volume Handled

(1980 = 100)



*in freight service volume = revenue ton-miles. Source: AAR



	1980 – 1986	1986 – 1996	1996 – 2004	2004 – 2008	1980 – 2008
Customer Share	161%	74%	127%	-37%	85%
Railroad Share	-61%	26%	-27%	137%	15%

Source- B. Kelly Eakin & Philip E. Schoech, <u>The Distribution of the Post-Staggers Act Railroad Productivity Gains</u>, Christensen Associates, Madison, Wisconsin, December 2010.



Profitability and Investment



Rail Profits – Only Recently Becoming Average

Return on Equity: Freight RRs vs. Fortune 500



Return on equity = net profit / shareholders' equity. Source: AAR, Fortune magazine

UPS vs. 4 Largest U.S. Freight Railroads

UPS vs. Four Largest U.S. Freight RRs (\$ billions)

_	UPS	RRs
Revenue	\$55.4	\$67.2
Net income	\$4.4	\$12.0
Avg. total assets	\$36.2	\$189.0
Profit margin	7.9%	17.8%
Return on assets	12.1%	6.3%

Data are 2013. Source: company 10-Ks

The four largest U.S. freight railroads combined need an asset base more than five times that required by UPS to generate only moderately more revenue. In order for the four railroads to have been as profitable as UPS (measured by return on assets) in 2013, their net income would have needed to be \$22.8 billion.

Close Correlation Between RR Earnings and Reinvestments



2003 2004 2005 2006 2007 2008 2009 2010 2011 2012

*Capital spending plus maintenance expenses. Data are current dollars and are for Class I railroads. Source: AAR

Record Investments in Recent Years Despite the Economy

Railroad Spending on Infrastructure and Equipment* (\$ billions)



*Capital spending + maintenance expenses. Data are for Class I railroads. Source: AAR





Spending by U.S. Freight Railroads on Infrastructure



Spending by U.S. Freight Railroads on Equipment

(\$ billions)





Net Results

Staggers Act: An Unqualified Success

(index 1981 = 100)



Source: AAR

Finally Closer to Earning Cost of Capital

Class I RR Cost of Capital vs. Return on Investment



Note: In 2006, the Surface Transportation Board significantly changed the method by which it calculates the rail industry cost of capital. p - preliminary Source: STB

Association of American Railroads www.aar.org

